

Att- H/a



ISIS-3105

- 72 -

PATENT

## SEQUENCE LISTING

### (1) GENERAL INFORMATION:

- (i) APPLICANTS: Ching-Leou Teng and Greg Hardee
- (ii) TITLE OF INVENTION: Compositions and Methods for the Delivery of Oligonucleotides Via the Alimentary Canal
- (iii) NUMBER OF SEQUENCES: 132
- (iv) CORRESPONDENCE ADDRESS:
  - (A) ADDRESSEE: Woodcock Washburn Kurtz Mackiewicz & Norris LLP
  - (B) STREET: One Liberty Place, 46th Floor
  - (C) CITY: Philadelphia
  - (D) STATE: PA
  - (E) COUNTRY: USA
  - (F) ZIP: 19103
- (v) COMPUTER READABLE FORM:
  - (A) MEDIUM TYPE: DISKETTE, 3.5 INCH, 1.44 MB STORAGE
  - (B) COMPUTER: IBM PS/2
  - (C) OPERATING SYSTEM: PC-DOS
  - (D) SOFTWARE: WORDPERFECT 6.1
- (vi) CURRENT APPLICATION DATA:
  - (A) APPLICATION NUMBER: 09/108,673
  - (B) FILING DATE: July 1, 1998
  - (C) CLASSIFICATION: n/A
- (vii) PRIOR APPLICATION DATA:
  - (A) APPLICATION NUMBER: 08/886,829
  - (B) FILING DATE: 01-JUL-1997
- (viii) ATTORNEY/AGENT INFORMATION:
  - (A) NAME: Paul K. Legaard
  - (B) REGISTRATION NUMBER: 38,534
  - (C) REFERENCE/DOCKET NUMBER: ISIS-3105
- (ix) TELECOMMUNICATION INFORMATION:
  - (A) TELEPHONE: (215) 568-3100
  - (B) TELEFAX: (215) 568 3439

### (2) INFORMATION FOR SEQ ID NO: 1:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 20 base pairs
  - (B) TYPE: Nucleic Acid
  - (C) STRANDEDNESS: Single
  - (D) TOPOLOGY: Linear
- (iv) ANTI-SENSE: Yes
- (ix) FEATURE:
  - (D) OTHER INFORMATION: ISIS 2302
- (x) PUBLICATION INFORMATION:
  - (H) DOCUMENT NUMBER: US 5591623 (SEQ ID NO:22)

(I) FILING DATE: 21-JAN-1993

(J) PUBLICATION DATE: 07-JAN-1997

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:

GCCCAAGCTG GCATCCGTCA 20

(2) INFORMATION FOR SEQ ID NO: 2:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 21 base pairs

(B) TYPE: Nucleic Acid

(C) STRANDEDNESS: Single

(D) TOPOLOGY: Linear

(iv) ANTI-SENSE: Yes

(ix) FEATURE:

(D) OTHER INFORMATION: GM1595

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: US 5580969 (SEQ ID NO:11)

(I) FILING DATE: 12-OCT-1993

(J) PUBLICATION DATE: 12-DEC-1996

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:

AGCCATAGCG AGGCTGAGGT T 21

(2) INFORMATION FOR SEQ ID NO: 3:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 base pairs

(B) TYPE: Nucleic Acid

(C) STRANDEDNESS: Single

(D) TOPOLOGY: Linear

(iv) ANTI-SENSE: Yes

(ix) FEATURE:

(D) OTHER INFORMATION: ISIS 5847

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: US 5591623 (SEQ ID NO:72)

(I) FILING DATE: 21-JAN-1993

(J) PUBLICATION DATE: 07-JAN-1997

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:

AACATCTCCG TACCATGCCA 20

(2) INFORMATION FOR SEQ ID NO: 4:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 21 base pairs

(B) TYPE: Nucleic Acid

(C) STRANDEDNESS: Single

(D) TOPOLOGY: Linear

(iv) ANTI-SENSE: Yes

(ix) FEATURE:

(D) OTHER INFORMATION: GM1535

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: US 5596090 (SEQ ID NO:3)

(I) FILING DATE: 12-OCT-1993

(J) PUBLICATION DATE: 21-JAN-1997

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:

CCCAGGCATT TTAAGTTGCT G 21

- (2) INFORMATION FOR SEQ ID NO: 5:
- (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 21 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: GM1515
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: US 5585479 (SEQ ID NO:1)
    - (I) FILING DATE: 12-OCT-1993
    - (J) PUBLICATION DATE: 17-DEC-1996
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5:

GTTTAAGGCA GCATCCTAAG A 21

- (2) INFORMATION FOR SEQ ID NO: 6:
- (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 21 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: GM1516
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: US 5585479 (SEQ ID NO:2)
    - (I) FILING DATE: 12-OCT-1993
    - (J) PUBLICATION DATE: 17-DEC-1996
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6:

TCACCCAAAG GTTTAGGCTT G 21

- (2) INFORMATION FOR SEQ ID NO: 7:
- (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 21 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: GM1517
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: US 5585479 (SEQ ID NO:3)
    - (I) FILING DATE: 12-OCT-1993
    - (J) PUBLICATION DATE: 17-DEC-1996
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7:

GCAATCATGA CTTCAAGAGT T 21

- (2) INFORMATION FOR SEQ ID NO: 8:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 18 base pairs
  - (B) TYPE: Nucleic Acid
  - (C) STRANDEDNESS: Single
  - (D) TOPOLOGY: Linear
- (iv) ANTI-SENSE: Yes
- (ix) FEATURE:
  - (D) OTHER INFORMATION: Antisense to c-myb mRNA; a.k.a. "MYB-AS"
- (x) PUBLICATION INFORMATION:
  - (A) AUTHORS: Calabretta, Bruno, et al.
  - (B) TITLE: Inhibition of Protooncogene Expression in Leukemic Cells: An Antisense Approach
  - (C) JOURNAL: Antisense Research and Applications, Crooke, S.T., et al., eds., CRC Press, Boca Raton
  - (D) VOLUME: Chapter 31
  - (F) PAGES: 535-545
  - (G) DATE: 1993
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 8:

GTGCCGGGGT CTTCGGGC 18

- (2) INFORMATION FOR SEQ ID NO: 9:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 20 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to mammalian DNA methyl transferase
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 95/15378 (SEQ ID NO:1)
    - (I) FILING DATE: 30-NOV-1994
    - (J) PUBLICATION DATE: 08-JUN-1995
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9:

CATCTGCCAT TCCCACTCTA 20

- (2) INFORMATION FOR SEQ ID NO: 10:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 24 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to mammalian DNA methyl transferase
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 95/15378 (SEQ ID NO:2)
    - (I) FILING DATE: 30-NOV-1994
    - (J) PUBLICATION DATE: 08-JUN-1995
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10:

TTGGCATCTG CCATTCCCAC TCTA 24

- (2) INFORMATION FOR SEQ ID NO: 11:
- (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 19 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to Vascular Endothelial Growth factor (VEGF)
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 95/04142 (SEQ ID NO:1)
    - (I) FILING DATE: 26-JUL-1994
    - (J) PUBLICATION DATE: 09-FEB-1995
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 11:

CATGGTTTCG GAGGGCGTC 19

- (2) INFORMATION FOR SEQ ID NO: 12:
- (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 20 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to Vascular Endothelial Growth factor (VEGF)
  - (x) PUBLICATION INFORMATION:
    - (A) AUTHORS: Robinson, G.S., et al.
    - (B) TITLE: Oligodeoxynucleotides inhibit retinal neovascularization in a murine model of proliferative retinopathy (SEQ ID NO: M3)
    - (C) JOURNAL: The Proceedings of the National Academy of Sciences (U.S.A.)
    - (D) VOLUME: 93
    - (F) PAGES: 4851-4856
    - (G) DATE: MAY-1996
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 12:

TCGCGCTCCC TCTCTCCGGC 20

- (2) INFORMATION FOR SEQ ID NO: 13:
- (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 20 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to Vascular Endothelial Growth factor (VEGF)

- (x) PUBLICATION INFORMATION:
  - (H) DOCUMENT NUMBER: WO 95/04142 (SEQ ID NO: 4)
  - (I) FILING DATE: 26-JUL-1994
  - (J) PUBLICATION DATE: 09-FEB-1995
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 13:

CACCCAAGAG AGCAGAAAGT 20

- (2) INFORMATION FOR SEQ ID NO: 14:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 22 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to Vascular Endothelial Growth factor (VEGF)
  - (x) PUBLICATION INFORMATION:
    - (A) AUTHORS: Nomura, M., et al.
    - (B) TITLE: Possible Participation of Autocrine and Paracrine Vascular Endothelial Growth factors in Hypoxia-induced Proliferation of Endothelial Cells and Pericytes
    - (C) JOURNAL: The Journal of Biological Chemistry
    - (D) VOLUME: 270
    - (E) ISSUE: 47
    - (F) PAGES: 28316-28324
    - (G) DATE: 24-NOV-1995
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 14:

CCCAAGACAG CAGAAAGTTC AT 22

- (2) INFORMATION FOR SEQ ID NO: 15:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 20 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to Vascular Endothelial Growth factor (VEGF)
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 95/04142 (SEQ ID NO: 5)
    - (I) FILING DATE: 26-JUL-1994
    - (J) PUBLICATION DATE: 09-FEB-1995
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 15:

TCGTGGGTGC AGCCTGGGAC 20

- (2) INFORMATION FOR SEQ ID NO: 16:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 21 base pairs
    - (B) TYPE: Nucleic Acid

- (C) STRANDEDNESS: Single
- (D) TOPOLOGY: Linear
- (iv) ANTI-SENSE: Yes
- (ix) FEATURE:
  - (D) OTHER INFORMATION: Antisense to Vascular Endothelial Growth factor (VEGF)
- (x) PUBLICATION INFORMATION:
  - (H) DOCUMENT NUMBER: WO 95/04142 (SEQ ID NO:11)
  - (I) FILING DATE: 26-JUL-1994
  - (J) PUBLICATION DATE: 09-FEB-1995
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 16:

CTGCCCCGGCT CACCGCCTCG G 21

- (2) INFORMATION FOR SEQ ID NO: 17:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 19 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to Vascular Endothelial Growth factor (VEGF)
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 95/04142 (SEQ ID NO: 12)
    - (I) FILING DATE: 26-JUL-1994
    - (J) PUBLICATION DATE: 09-FEB-1995
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 17:

CATGGTTTCG GAGGCCCGA 19

- (2) INFORMATION FOR SEQ ID NO: 18:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 20 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to Vascular Endothelial Growth factor (VEGF)
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 95/04142 (SEQ ID NO: 13)
    - (I) FILING DATE: 26-JUL-1994
    - (J) PUBLICATION DATE: 09-FEB-1995
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 18:

CACCCAAGAC AGCAGAAAGT 20

- (2) INFORMATION FOR SEQ ID NO: 19:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 20 base pairs
    - (B) TYPE: Nucleic Acid

- (C) STRANDEDNESS: Single
- (D) TOPOLOGY: Linear
- (iv) ANTI-SENSE: Yes
- (ix) FEATURE:
  - (D) OTHER INFORMATION: Antisense to Vascular Endothelial Growth factor (VEGF)
- (x) PUBLICATION INFORMATION:
  - (H) DOCUMENT NUMBER: WO 95/04142 (SEQ ID NO:17)
  - (I) FILING DATE: 26-JUL-1994
  - (J) PUBLICATION DATE: 09-FEB-1995
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 19:

CCATGGGTGC AGCCTGGGAC 20

- (2) INFORMATION FOR SEQ ID NO: 20:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 20 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to Vascular Endothelial Growth factor (VEGF)
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 95/04142 (SEQ ID NO: 17)
    - (I) FILING DATE: 26-JUL-1994
    - (J) PUBLICATION DATE: 09-FEB-1995
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 20:

CCATGGGTGC AGCCTGGGAC 20

- (2) INFORMATION FOR SEQ ID NO: 21:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 21 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to Vascular Endothelial Growth factor (VEGF); a.k.a. "Vm"
  - (x) PUBLICATION INFORMATION:
    - (A) AUTHORS: Robinson, G.S., et al.
    - (B) TITLE: Oligodeoxynucleotides inhibit retinal neovascularization in a murine model of proliferative retinopathy
    - (C) JOURNAL: The Proceedings of the National Academy of Sciences (U.S.A.)
    - (D) VOLUME: 93
    - (F) PAGES: 4851-4856
    - (G) DATE: MAY-1996
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 95/04142 (SEQ ID NO:2)
    - (I) FILING DATE: 26-JUL-1994



(J) PUBLICATION DATE: 09-FEB-1995

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 21:

CAGCCTGGCT CACCGCCTTG G 21

(2) INFORMATION FOR SEQ ID NO: 22:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 base pairs

(B) TYPE: Nucleic Acid

(C) STRANDEDNESS: Single

(D) TOPOLOGY: Linear

(iv) ANTI-SENSE: Yes

(ix) FEATURE:

(D) OTHER INFORMATION: Antisense to bcl-2 mRNA

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: WO 95/08350 (SEQ ID NO: 1)

(I) FILING DATE: 20-SEP-1994

(J) PUBLICATION DATE: 30-MAR-1995

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 22:

CCCTTCCTAC CGCGTGCAC 20

(2) INFORMATION FOR SEQ ID NO: 23:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 base pairs

(B) TYPE: Nucleic Acid

(C) STRANDEDNESS: Single

(D) TOPOLOGY: Linear

(iv) ANTI-SENSE: Yes

(ix) FEATURE:

(D) OTHER INFORMATION: Antisense to bcl-2 mRNA

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: WO 95/08350 (SEQ ID NO: 3)

(I) FILING DATE: 20-SEP-1994

(J) PUBLICATION DATE: 30-MAR-1995

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 23:

CCTCCGACCC ATCCACGTAG 20

(2) INFORMATION FOR SEQ ID NO: 24:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 base pairs

(B) TYPE: Nucleic Acid

(C) STRANDEDNESS: Single

(D) TOPOLOGY: Linear

(iv) ANTI-SENSE: Yes

(ix) FEATURE:

(D) OTHER INFORMATION: Antisense to bcl-2 mRNA

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: WO 95/08350 (SEQ ID NO: 5)

(I) FILING DATE: 20-SEP-1994

(J) PUBLICATION DATE: 30-MAR-1995

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 24:

GTTGACGTCC TACGGAAACA 20

- (2) INFORMATION FOR SEQ ID NO: 25:
- (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 17 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to bcl-2 mRNA
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 95/08350 (SEQ ID NO: 8)
    - (I) FILING DATE: 20-SEP-1994
    - (J) PUBLICATION DATE: 30-MAR-1995
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 25:

CGCGTGCGAC CCTCTTG 17

- (2) INFORMATION FOR SEQ ID NO: 26:
- (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 17 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to bcl-2 mRNA
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 95/08350 (SEQ ID NO: 9)
    - (I) FILING DATE: 20-SEP-1994
    - (J) PUBLICATION DATE: 30-MAR-1995
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 26:

TCCTACCGCG TGCGACC 17

- (2) INFORMATION FOR SEQ ID NO: 27:
- (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 17 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to bcl-2 mRNA
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 95/08350 (SEQ ID NO: 10)
    - (I) FILING DATE: 20-SEP-1994
    - (J) PUBLICATION DATE: 30-MAR-1995
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 27:

TCCTACCGCG TGCGACC 17

- (2) INFORMATION FOR SEQ ID NO: 28:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 17 base pairs
  - (B) TYPE: Nucleic Acid
  - (C) STRANDEDNESS: Single
  - (D) TOPOLOGY: Linear
- (iv) ANTI-SENSE: Yes
- (ix) FEATURE:
  - (D) OTHER INFORMATION: Antisense to bcl-2 mRNA
- (x) PUBLICATION INFORMATION:
  - (H) DOCUMENT NUMBER: WO 95/08350 (SEQ ID NO: 11)
  - (I) FILING DATE: 20-SEP-1994
  - (J) PUBLICATION DATE: 30-MAR-1995
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 28:

CCTTCCTACC GCGTGCG 17

- (2) INFORMATION FOR SEQ ID NO: 29:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 17 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to bcl-2 mRNA
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 95/08350 (SEQ ID NO: 12)
    - (I) FILING DATE: 20-SEP-1994
    - (J) PUBLICATION DATE: 30-MAR-1995
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 29

GACCCTTCCT ACCGCGT 17

- (2) INFORMATION FOR SEQ ID NO: 30:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 17 base pairs
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to bcl-2 mRNA
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 95/08350 (SEQ ID NO: 13)
    - (I) FILING DATE: 20-SEP-1994
    - (J) PUBLICATION DATE: 30-MAR-1995
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 30:

GGAGACCCTT CCTACCG 17

- (2) INFORMATION FOR SEQ ID NO: 31:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 15 base pairs
    - (B) TYPE: Nucleic Acid

- (C) STRANDEDNESS: Single
- (D) TOPOLOGY: Linear
- (iv) ANTI-SENSE: Yes
- (ix) FEATURE:
  - (D) OTHER INFORMATION: Antisense to bcl-2 mRNA
- (x) PUBLICATION INFORMATION:
  - (H) DOCUMENT NUMBER: WO 95/08350 (SEQ ID NO: 14)
  - (I) FILING DATE: 20-SEP-1994
  - (J) PUBLICATION DATE: 30-MAR-1995
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 31:

GCGGCGGCAG CGCGG 15

- (2) INFORMATION FOR SEQ ID NO: 32:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 15 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to bcl-2 mRNA
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 95/08350 (SEQ ID NO: 15)
    - (I) FILING DATE: 20-SEP-1994
    - (J) PUBLICATION DATE: 30-MAR-1995
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 32:

CGGCGGGGCG ACGGA 15

- (2) INFORMATION FOR SEQ ID NO: 33:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 16 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to bcl-2 mRNA
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 95/08350 (SEQ ID NO: 16)
    - (I) FILING DATE: 20-SEP-1994
    - (J) PUBLICATION DATE: 30-MAR-1995
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 33:

CGGGAGCGCG GCGGGC 16

- (2) INFORMATION FOR SEQ ID NO: 34:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 18 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes

## (ix) FEATURE:

(D) OTHER INFORMATION: Antisense to bcl-2 mRNA; a.k.a. "BCL-2"

## (x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: WO 95/08350 (SEQ ID NO:17)

(I) FILING DATE: 20-SEP-1994

(J) PUBLICATION DATE: 30-MAR-1995

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 34:

TCTCCCAGCG TGCGCCAT 18

## (2) INFORMATION FOR SEQ ID NO: 35:

## (i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 19 base pairs

(B) TYPE: Nucleic Acid

(C) STRANDEDNESS: Single

(D) TOPOLOGY: Linear

(iv) ANTI-SENSE: Yes

## (ix) FEATURE:

(D) OTHER INFORMATION: Antisense to bcl/abl mRNA

## (x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: WO 92/02641

(I) FILING DATE: 09-AUG-1991

(J) PUBLICATION DATE: 20-FEB-1992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 35:

GGCGTTTTGA ACTCTGCTT 19

## (2) INFORMATION FOR SEQ ID NO: 36:

## (i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 base pairs

(B) TYPE: Nucleic Acid

(C) STRANDEDNESS: Single

(D) TOPOLOGY: Linear

(iv) ANTI-SENSE: Yes

## (ix) FEATURE:

(D) OTHER INFORMATION: Antisense to several isoforms of PKC;  
a.k.a. "oligo<sub>anti-PKC $\alpha$</sub> "

## (x) PUBLICATION INFORMATION:

(A) AUTHORS: Shih, M., et al.

(B) TITLE: Oligodeoxynucleotides antisense to mRNA encoding  
protein kinase A, protein kinase C and  $\beta$ -adrenergic receptor  
kinase reveal distinctive cell-type-specific roles in agonist-  
induced desensitization(C) JOURNAL: The Proceedings of the National Academy of Sciences  
(U.S.A.)

(D) VOLUME: 91

(F) PAGES: 12193-12197

(G) DATE: 06-DEC-1994

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 36:

AAGGTGGGCT GCTTGAAGAA 20

## (2) INFORMATION FOR SEQ ID NO: 37:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 base pairs
- (B) TYPE: Nucleic Acid
- (C) STRANDEDNESS: Single
- (D) TOPOLOGY: Linear
- (iv) ANTI-SENSE: Yes
- (ix) FEATURE:
  - (D) OTHER INFORMATION: Antisense to  $\zeta$ -Protein Kinase C gene
- (x) PUBLICATION INFORMATION:
  - (H) DOCUMENT NUMBER: WO 93/20101 (SEQ ID NO:14)
  - (I) FILING DATE: 02-APR-1993
  - (J) PUBLICATION DATE: 14-OCT-1993
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 37:

GGTCCTGCTG GGCAT 15

- (2) INFORMATION FOR SEQ ID NO: 38:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 20 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to  $\alpha$ -Protein Kinase C gene; a.k.a. "ISIS 3521"
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 95/02069 (SEQ ID NO:2)
    - (I) FILING DATE: 08-JUL-1994
    - (J) PUBLICATION DATE: 19-JAN-1995
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 38:

GTTCTCGCTG GTGAGTTTCA 20

- (2) INFORMATION FOR SEQ ID NO: 39:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 18 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 97/11171 (SEQ ID NO:1)
    - (I) FILING DATE: 19-SEP-1996
    - (J) PUBLICATION DATE: 27-MAR-1997
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 39:

GCGTGCCCTCC TCACTGGC 18

- (2) INFORMATION FOR SEQ ID NO: 40:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 18 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear

- (iv) ANTI-SENSE: Yes
- (x) PUBLICATION INFORMATION:
  - (H) DOCUMENT NUMBER: WO 97/11171 (SEQ ID NO:4)
  - (I) FILING DATE: 19-SEP-1996
  - (J) PUBLICATION DATE: 27-MAR-1997
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 40:

GCGUGCCTCC TCACUGGC 18

- (2) INFORMATION FOR SEQ ID NO: 41:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 18 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 97/11171 (SEQ ID NO:6)
    - (I) FILING DATE: 19-SEP-1996
    - (J) PUBLICATION DATE: 27-MAR-1997
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 41:

GCGTGCCUCC UACTGGC 18

- (2) INFORMATION FOR SEQ ID NO: 42:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 20 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to  $\beta$ ARK1 and  $\beta$ ARK2; a.k.a. as "oligo<sub>anti- $\beta$ ARK2</sub>"
  - (x) PUBLICATION INFORMATION:
    - (A) AUTHORS: Shih, M., et al.
    - (B) TITLE: Oligodeoxynucleotides antisense to mRNA encoding protein kinase A, protein kinase C and  $\beta$ -adrenergic receptor kinase reveal distinctive cell-type-specific roles in agonist-induced desensitization
    - (C) JOURNAL: The Proceedings of the National Academy of Sciences (U.S.A.)
    - (D) VOLUME: 91
    - (F) PAGES: 12193-12197
    - (G) DATE: 06-DEC-1994
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 42:

ACCGCCTCCA GGTCCGCCAT 20

- (2) INFORMATION FOR SEQ ID NO: 43:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 20 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single

- (D) TOPOLOGY: Linear
- (iv) ANTI-SENSE: Yes
- (ix) FEATURE:
  - (D) OTHER INFORMATION: Antisense to Ha-ras Gene;  
a.k.a. "ISIS 2503"
- (x) PUBLICATION INFORMATION:
  - (H) DOCUMENT NUMBER: US 5576208 (SEQ ID NO:2)
  - (I) FILING DATE: 26-AUG-1994
  - (J) PUBLICATION DATE: 19-NOV-1996
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 43:

TCCGTCATCG CTCCTCAGGG 20

- (2) INFORMATION FOR SEQ ID NO: 44:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 22 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to Multi-drug  
Resistance-1 (MDR-1) gene
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 96/02556 (SEQ ID NO:1)
    - (I) FILING DATE: 18-JUL-1995
    - (J) PUBLICATION DATE: 01-FEB-1996
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 44:

TGTGCTCTTC CCACAGCCAC TG 22

- (2) INFORMATION FOR SEQ ID NO: 45:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 20 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to Multi-drug  
Resistance-1 (MDR-1) gene
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 96/02556 (SEQ ID NO:2)
    - (I) FILING DATE: 18-JUL-1995
    - (J) PUBLICATION DATE: 01-FEB-1996
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 45:

TGTGCTCTTC CCACAGCCAC 20

- (2) INFORMATION FOR SEQ ID NO: 46:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 20 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single



- (D) TOPOLOGY: Linear
- (iv) ANTI-SENSE: Yes
- (ix) FEATURE:
  - (D) OTHER INFORMATION: Antisense to Multi-drug Resistance-1 (MDR-1) gene
- (x) PUBLICATION INFORMATION:
  - (H) DOCUMENT NUMBER: WO 96/02556 (SEQ ID NO:3)
  - (I) FILING DATE: 18-JUL-1995
  - (J) PUBLICATION DATE: 01-FEB-1996
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 46:

GTGCTCTTCC CACAGCCACT 20

- (2) INFORMATION FOR SEQ ID NO: 47:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 20 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to Multi-drug Resistance-1 (MDR-1) gene
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 96/02556 (SEQ ID NO:4)
    - (I) FILING DATE: 18-JUL-1995
    - (J) PUBLICATION DATE: 01-FEB-1996
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 47:

TGCTCTTCCC ACAGCCACTG 20

- (2) INFORMATION FOR SEQ ID NO: 48:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 20 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to multidrug resistance-associated protein (MRP) gene; a.k.a. "ISIS 7597"
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: US 5510239 (SEQ ID NO:8)
    - (I) FILING DATE: 18-OCT-1993
    - (J) PUBLICATION DATE: 23-APR-1996
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 48:

TGCTGTTCGT GCCCCGCCG 20

- (2) INFORMATION FOR SEQ ID NO: 49:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 20 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single

- (D) TOPOLOGY: Linear
- (iv) ANTI-SENSE: Yes
- (ix) FEATURE:
  - (D) OTHER INFORMATION: Antisense to A-raf gene; a.k.a. "ISIS 9069"
- (x) PUBLICATION INFORMATION:
  - (H) DOCUMENT NUMBER: US 5563255 (SEQ ID NO:37)
  - (I) FILING DATE: 31-MAY-1994
  - (J) PUBLICATION DATE: 08-OCT-1996
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 49:

CTAAGGCACA AGGCGGGCTG 20

- (2) INFORMATION FOR SEQ ID NO: 50:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 20 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to c-raf kinase Gene; a.k.a. "ISIS 5132"
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: US 5563255 (SEQ ID NO:8)
    - (I) FILING DATE: 05-31-1994
    - (J) PUBLICATION DATE: 08-OCT-1996
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 50:

TCCCGCCTGT GACATGCATT 20

- (2) INFORMATION FOR SEQ ID NO: 51:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 25 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to beta/A4 peptide
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 95/09236 (SEQ ID NO:1)
    - (I) FILING DATE: 28-SEP-1994
    - (J) PUBLICATION DATE: 06-APR-1995
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 51:

CCTCTCTGTT TAAAACTTTA TCCAT 25

- (2) INFORMATION FOR SEQ ID NO: 52:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 21 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear

(iv) ANTI-SENSE: Yes  
(ix) FEATURE:  
(D) OTHER INFORMATION: Antisense to beta/A4 peptide  
(x) PUBLICATION INFORMATION:  
(H) DOCUMENT NUMBER: WO 95/09236 (SEQ ID NO:2)  
(I) FILING DATE: 28-SEP-1994  
(J) PUBLICATION DATE: 06-APR-1995  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 52:  
TTCATATCCT GAGTCATGTC G 21

(2) INFORMATION FOR SEQ ID NO: 53:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 24 base pairs  
(B) TYPE: Nucleic Acid  
(C) STRANDEDNESS: Single  
(D) TOPOLOGY: Linear  
(iv) ANTI-SENSE: Yes  
(ix) FEATURE:  
(D) OTHER INFORMATION: Antisense to beta/A4 peptide  
(x) PUBLICATION INFORMATION:  
(H) DOCUMENT NUMBER: WO 95/09236 (SEQ ID NO:3)  
(I) FILING DATE: 28-SEP-1994  
(J) PUBLICATION DATE: 06-APR-1995  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 53:  
GTCCCAGCGC TACGACGGGC CAAA 24

(2) INFORMATION FOR SEQ ID NO: 54:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: Nucleic Acid  
(C) STRANDEDNESS: Single  
(D) TOPOLOGY: Linear  
(iv) ANTI-SENSE: Yes  
(ix) FEATURE:  
(D) OTHER INFORMATION: Antisense to beta/A4 peptide  
(x) PUBLICATION INFORMATION:  
(H) DOCUMENT NUMBER: WO 95/09236 (SEQ ID NO:4)  
(I) FILING DATE: 28-SEP-1994  
(J) PUBLICATION DATE: 06-APR-1995  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 54:

GTCCCAGCGC TAC 13

(2) INFORMATION FOR SEQ ID NO: 55:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: Nucleic Acid  
(C) STRANDEDNESS: Single  
(D) TOPOLOGY: Linear  
(iv) ANTI-SENSE: Yes  
(ix) FEATURE:  
(D) OTHER INFORMATION: Antisense to beta/A4 peptide  
(x) PUBLICATION INFORMATION:  
(H) DOCUMENT NUMBER: WO 95/09236 (SEQ ID NO:5)

(I) FILING DATE: 28-SEP-1994

(J) PUBLICATION DATE: 06-APR-1995

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 55:

TACGACGGGC CAAA 14

(2) INFORMATION FOR SEQ ID NO: 56:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 21 base pairs

(B) TYPE: Nucleic Acid

(C) STRANDEDNESS: Single

(D) TOPOLOGY: Linear

(iv) ANTI-SENSE: Yes

(ix) FEATURE:

(D) OTHER INFORMATION: Antisense to beta/A4 peptide

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: WO 95/09236 (SEQ ID NO:6)

(I) FILING DATE: 28-SEP-1994

(J) PUBLICATION DATE: 06-APR-1995

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 56:

GTCCCAGCGC TACGACGGGC C 21

(2) INFORMATION FOR SEQ ID NO: 57:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 18 base pairs

(B) TYPE: Nucleic Acid

(C) STRANDEDNESS: Single

(D) TOPOLOGY: Linear

(iv) ANTI-SENSE: Yes

(ix) FEATURE:

(D) OTHER INFORMATION: Antisense to beta/A4 peptide

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: WO 95/09236 (SEQ ID NO:7)

(I) FILING DATE: 28-SEP-1994

(J) PUBLICATION DATE: 06-APR-1995

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 57:

GTCCCAGCGC TACGACGG 18

(2) INFORMATION FOR SEQ ID NO: 58:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 15 base pairs

(B) TYPE: Nucleic Acid

(C) STRANDEDNESS: Single

(D) TOPOLOGY: Linear

(iv) ANTI-SENSE: Yes

(ix) FEATURE:

(D) OTHER INFORMATION: Antisense to beta/A4 peptide

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: WO 95/09236 (SEQ ID NO:8)

(I) FILING DATE: 28-SEP-1994

(J) PUBLICATION DATE: 06-APR-1995

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 58:

GTCCCAGCGC TACGA 15

- (2) INFORMATION FOR SEQ ID NO: 59:
- (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 21 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to beta/A4 peptide
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 95/09236 (SEQ ID NO:9)
    - (I) FILING DATE: 28-SEP-1994
    - (J) PUBLICATION DATE: 06-APR-1995
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 59:

CCAGCGCTAC GACGGGCCAA A 21

- (2) INFORMATION FOR SEQ ID NO: 60:
- (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 18 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to beta/A4 peptide
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 95/09236 (SEQ ID NO:10)
    - (I) FILING DATE: 28-SEP-1994
    - (J) PUBLICATION DATE: 06-APR-1995
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 60:

GCGCTACGAC GGGCCAAA 18

- (2) INFORMATION FOR SEQ ID NO: 61:
- (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 15 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to beta/A4 peptide
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 95/09236 (SEQ ID NO:11)
    - (I) FILING DATE: 28-SEP-1994
    - (J) PUBLICATION DATE: 06-APR-1995
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 61:

CTACGACGGG CCAA 15

- (2) INFORMATION FOR SEQ ID NO: 62:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 24 base pairs
  - (B) TYPE: Nucleic Acid
  - (C) STRANDEDNESS: Single
  - (D) TOPOLOGY: Linear
- (iv) ANTI-SENSE: Yes
- (ix) FEATURE:
  - (D) OTHER INFORMATION: Antisense to beta/A4 peptide
- (x) PUBLICATION INFORMATION:
  - (H) DOCUMENT NUMBER: WO 95/09236 (SEQ ID NO:15)
  - (I) FILING DATE: 28-SEP-1994
  - (J) PUBLICATION DATE: 06-APR-1995
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 62:

AAACCGGGCA GCATCGCGAC CCTG 24

- (2) INFORMATION FOR SEQ ID NO: 63:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 18 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to beta-globin; a.k.a. "5'ss"
  - (x) PUBLICATION INFORMATION:
    - (A) AUTHORS: Sierakowska, H., et al.
    - (B) TITLE: Repair of thalassemic human  $\beta$ -globin in mammalian cells by antisense oligonucleotides
    - (C) JOURNAL: The Proceedings of the National Academy of Sciences (U.S.A.)
    - (D) VOLUME: 93
    - (F) PAGES: 12840-12844
    - (G) DATE: 12-NOV-1996
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 63:

GCUAUUACCU UAACCCAG 18

- (2) INFORMATION FOR SEQ ID NO: 64:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 17 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to beta-globin; a.k.a. "3'ss"
  - (x) PUBLICATION INFORMATION:
    - (A) AUTHORS: Sierakowska, H., et al.
    - (B) TITLE: Repair of thalassemic human  $\beta$ -globin in mammalian cells by antisense oligonucleotides
    - (C) JOURNAL: The Proceedings of the National Academy of Sciences (U.S.A.)
    - (D) VOLUME: 93

(F) PAGES: 12840-12844

(G) DATE: 12-NOV-1996

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 64:

CAUUAUUGCC CUGAAAG 17

(2) INFORMATION FOR SEQ ID NO: 65:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 21 base pairs

(B) TYPE: Nucleic Acid

(C) STRANDEDNESS: Single

(D) TOPOLOGY: Linear

(iv) ANTI-SENSE: Yes

(ix) FEATURE:

(D) OTHER INFORMATION: Antisense to malarial agents; a.k.a. "PSI"

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: WO 93/13740

(I) FILING DATE: 31-DEC-1991

(J) PUBLICATION DATE: 22-JUL-1993

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 65:

TAAAAAGAAT ATGATCTTCA T 21

(2) INFORMATION FOR SEQ ID NO: 66:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 18 base pairs

(B) TYPE: Nucleic Acid

(C) STRANDEDNESS: Single

(D) TOPOLOGY: Linear

(iv) ANTI-SENSE: Yes

(ix) FEATURE:

(D) OTHER INFORMATION: Antisense to malarial agents; a.k.a. "PSII"

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: WO 93/13740 (SEQ ID NO: PSII)

(I) FILING DATE: 31-DEC-1991

(J) PUBLICATION DATE: 22-JUL-1993

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 66:

AGCAACTGAG CCACCTGA 18

(2) INFORMATION FOR SEQ ID NO: 67:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 21 base pairs

(B) TYPE: Nucleic Acid

(C) STRANDEDNESS: Single

(D) TOPOLOGY: Linear

(iv) ANTI-SENSE: Yes

(ix) FEATURE:

(D) OTHER INFORMATION: Antisense to malarial agents; a.k.a. "PSIII"

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: WO 93/13740

(I) FILING DATE: 31-DEC-1991

(J) PUBLICATION DATE: 22-JUL-1993

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 67:

GTCGCAGACT TGTTCATCA T 21

(2) INFORMATION FOR SEQ ID NO: 68:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 21 base pairs

(B) TYPE: Nucleic Acid

(C) STRANDEDNESS: Single

(D) TOPOLOGY: Linear

(iv) ANTI-SENSE: Yes

(ix) FEATURE:

(D) OTHER INFORMATION: Antisense to malarial agents; a.k.a. "RI"

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: WO 93/13740

(I) FILING DATE: 31-DEC-1991

(J) PUBLICATION DATE: 22-JUL-1993

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 68:

CTTGGCAGCT GCGCGTGACA T 21

(2) INFORMATION FOR SEQ ID NO: 69:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 21 base pairs

(B) TYPE: Nucleic Acid

(C) STRANDEDNESS: Single

(D) TOPOLOGY: Linear

(iv) ANTI-SENSE: Yes

(ix) FEATURE:

(D) OTHER INFORMATION: Antisense to scistosome worms

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: WO 95/33759 (SEQ ID NO:1)

(I) FILING DATE: 30-MAY-1995

(J) PUBLICATION DATE: 14-DEC-1995

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 69:

GCCATAGGGG GCAGGGAAGG C 21

(2) INFORMATION FOR SEQ ID NO: 70:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 12 base pairs

(B) TYPE: Nucleic Acid

(C) STRANDEDNESS: Single

(D) TOPOLOGY: Linear

(iv) ANTI-SENSE: Yes

(ix) FEATURE:

(D) OTHER INFORMATION: Antisense to HTLV-III

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: WO 87/07300 (SEQ ID NO:A)

(I) FILING DATE: 22-MAY-1987

(J) PUBLICATION DATE: 03-DEC-1987

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 70:



CTGCTAGAGA TT

12

- (2) INFORMATION FOR SEQ ID NO: 71:
- (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 20 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to HTLV-III
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 87/07300 (SEQ ID NO:B)
    - (I) FILING DATE: 22-MAY-1987
    - (J) PUBLICATION DATE: 03-DEC-1987
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 71:

CTGCTAGAGA TTTTCCACAC 20

- (2) INFORMATION FOR SEQ ID NO: 72:
- (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 25 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to HTLV-III
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 87/07300 (SEQ ID NO:C)
    - (I) FILING DATE: 22-MAY-1987
    - (J) PUBLICATION DATE: 03-DEC-1987
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 72:

TTCAAGTCCC TGTCGGGCG CCAA 25

- (2) INFORMATION FOR SEQ ID NO: 73:
- (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 20 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to HTLV-III
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 87/07300 (SEQ ID NO:D)
    - (I) FILING DATE: 22-MAY-1987
    - (J) PUBLICATION DATE: 03-DEC-1987
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 73:

GCGTACTCAC CAGTCGCCGC 20

- (2) INFORMATION FOR SEQ ID NO: 74:
- (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 14 base pairs
- (B) TYPE: Nucleic Acid
- (C) STRANDEDNESS: Single
- (D) TOPOLOGY: Linear
- (iv) ANTI-SENSE: Yes
- (ix) FEATURE:
  - (D) OTHER INFORMATION: Antisense to HTLV-III
- (x) PUBLICATION INFORMATION:
  - (H) DOCUMENT NUMBER: WO 87/07300 (SEQ ID NO:E)
  - (I) FILING DATE: 22-MAY-1987
  - (J) PUBLICATION DATE: 03-DEC-1987
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 74:

CTGCTAGAGA TTAA

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- (2) INFORMATION FOR SEQ ID NO: 75:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 20 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to HTLV-III
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 87/07300 (SEQ ID NO:F)
    - (I) FILING DATE: 22-MAY-1987
    - (J) PUBLICATION DATE: 03-DEC-1987
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 75:

ACACCCAATT CTGAAAATGG

20

- (2) INFORMATION FOR SEQ ID NO: 76:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 25 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to HIV-1
  - (x) PUBLICATION INFORMATION:
    - (A) AUTHORS: Agrawal, Sudhir  
Tang, Jin Yan
    - (B) TITLE: GEM 91-An Antisense Oligonucleotide Phosphorothioate as a Therapeutic Agent for AIDS
    - (C) JOURNAL: Antisense Research and Development
    - (D) VOLUME: 2
    - (E) ISSUE: 6
    - (F) PAGES: 261-266
    - (G) DATE: Winter-1992
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 94/08004 (SEQ ID NO:1)
    - (I) FILING DATE: 04-OCT-1993

(J) PUBLICATION DATE: 14-APR-1994

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 76:

CTCTCGCACC CATCTCTCTC CTTCT 25

(2) INFORMATION FOR SEQ ID NO: 77:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 26 base pairs
- (B) TYPE: Nucleic Acid
- (C) STRANDEDNESS: Single
- (D) TOPOLOGY: Linear

(iv) ANTI-SENSE: Yes

(ix) FEATURE:

(D) OTHER INFORMATION: Antisense to HIV-1

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: WO 94/08004 (SEQ ID NO:2)

(I) FILING DATE: 04-OCT-1993

(J) PUBLICATION DATE: 14-APR-1994

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 77:

CTCTCGCACC CATCTCTCTC CTTCTA 26

(2) INFORMATION FOR SEQ ID NO: 78:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 26 base pairs
- (B) TYPE: Nucleic Acid
- (C) STRANDEDNESS: Single
- (D) TOPOLOGY: Linear

(iv) ANTI-SENSE: Yes

(ix) FEATURE:

(D) OTHER INFORMATION: Antisense to HIV-1

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: WO 94/08004 (SEQ ID NO:3)

(I) FILING DATE: 04-OCT-1993

(J) PUBLICATION DATE: 14-APR-1994

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 78:

GCTCTCGCAC CCATCTCTCT CTTCT 26

(2) INFORMATION FOR SEQ ID NO: 79:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 27 base pairs
- (B) TYPE: Nucleic Acid
- (C) STRANDEDNESS: Single
- (D) TOPOLOGY: Linear

(iv) ANTI-SENSE: Yes

(ix) FEATURE:

(D) OTHER INFORMATION: Antisense to HIV-1

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: WO 94/08004 (SEQ ID NO:4)

(I) FILING DATE: 04-OCT-1993

(J) PUBLICATION DATE: 14-APR-1994

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 79:

GCTCTCGCAC CCATCTCTCT CTTCTA 27

- (2) INFORMATION FOR SEQ ID NO: 80:
- (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 28 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to HIV-1
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 94/08004 (SEQ ID NO:5)
    - (I) FILING DATE: 04-OCT-1993
    - (J) PUBLICATION DATE: 14-APR-1994
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 80:

GCTCTCGCAC CCATCTCTCT CTTCTAG 28

- (2) INFORMATION FOR SEQ ID NO: 81:
- (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 28 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to HIV-1
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 94/08004 (SEQ ID NO:6)
    - (I) FILING DATE: 04-OCT-1993
    - (J) PUBLICATION DATE: 14-APR-1994
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 81:

CGCTCTCGCA CCCATCTCTC TCCTTCTA 28

- (2) INFORMATION FOR SEQ ID NO: 82:
- (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 29 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to HIV-1
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 94/08004 (SEQ ID NO:7)
    - (I) FILING DATE: 04-OCT-1993
    - (J) PUBLICATION DATE: 14-APR-1994
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 82:

CGCTCTCGCA CCCATCTCTC TCCTTCTAG 29

- (2) INFORMATION FOR SEQ ID NO: 83:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 30 base pairs
  - (B) TYPE: Nucleic Acid
  - (C) STRANDEDNESS: Single
  - (D) TOPOLOGY: Linear
- (iv) ANTI-SENSE: Yes
- (ix) FEATURE:
  - (D) OTHER INFORMATION: Antisense to HIV-1
- (x) PUBLICATION INFORMATION:
  - (H) DOCUMENT NUMBER: WO 94/08004 (SEQ ID NO:8)
  - (I) FILING DATE: 04-OCT-1993
  - (J) PUBLICATION DATE: 14-APR-1994
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 83:

CGCTCTCGCA CCCATCTCTC TCCTTCTAGC 30

- (2) INFORMATION FOR SEQ ID NO: 84:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 30 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to HIV-1
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 94/08004 (SEQ ID NO:9)
    - (I) FILING DATE: 04-OCT-1993
    - (J) PUBLICATION DATE: 14-APR-1994
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 84:

ACGCTCTCGC ACCCATCTCT CTCCTTCTAG 30

- (2) INFORMATION FOR SEQ ID NO: 85
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 20 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to HIV-1
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 94/08004 (SEQ ID NO:10)
    - (I) FILING DATE: 04-OCT-1993
    - (J) PUBLICATION DATE: 14-APR-1994
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 85:

CTCGCACCCA TCTCTCTCCT 20

- (2) INFORMATION FOR SEQ ID NO: 86:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 17 base pairs
    - (B) TYPE: Nucleic Acid

- (C) STRANDEDNESS: Single
- (D) TOPOLOGY: Linear
- (iv) ANTI-SENSE: Yes
- (ix) FEATURE:
  - (D) OTHER INFORMATION: Antisense to HIV-1; a.k.a. "AR 177"
- (x) PUBLICATION INFORMATION:
  - (A) AUTHORS: Bishop, J.S., et al.
  - (B) TITLE: Intramolecular G-quartet Motifs Confer Nuclease Resistance to a Potent Anti-HIV Oligonucleotide
  - (C) JOURNAL: The Journal of Biological Chemistry
  - (D) VOLUME: 271
  - (E) ISSUE: 10
  - (F) PAGES: 5698-5703
  - (G) DATE: 08-MAR-1996
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 86:

GTGGTGGGTG GGTGGGT 17

- (2) INFORMATION FOR SEQ ID NO: 87:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 26 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to HIV
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 87:

GCCTATTCTG CTATGTCGAC ACCCAA 26

- (2) INFORMATION FOR SEQ ID NO: 88:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 26 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to HIV
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 88:

CTTCGGGCCT GTCGGGTCCC CTCGGG 26

- (2) INFORMATION FOR SEQ ID NO: 89:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 26 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:

- (D) OTHER INFORMATION: Antisense to HIV
- (x) PUBLICATION INFORMATION:
  - (H) DOCUMENT NUMBER: WO 95/03407
  - (I) FILING DATE: 19-JUL-1994
  - (J) PUBLICATION DATE: 02-FEB-1995
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 89:

CTTCGGGCCT GTCGGGTCCC CTCGGG 26

- (2) INFORMATION FOR SEQ ID NO: 90:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 26 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to HIV
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 96/02557 (SEQ ID NO:3)
    - (I) FILING DATE: 14-JUL-1995
    - (J) PUBLICATION DATE: 01-FEB-1996
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 90:

GCTGGTGATC CTTTCCATCC CTGTGG 26

- (2) INFORMATION FOR SEQ ID NO: 91:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 26 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to HIV
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 96/02557 (SEQ ID NO:5)
    - (I) FILING DATE: 14-JUL-1995
    - (J) PUBLICATION DATE: 01-FEB-1996
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 91:

CTACTACTCC TTGACTTTGG GGATTG 26

- (2) INFORMATION FOR SEQ ID NO: 92:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 29 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to HIV
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 96/02557 (SEQ ID NO:6)

(I) FILING DATE: 14-JUL-1995

(J) PUBLICATION DATE: 01-FEB-1996

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 92:

CCTCTGTTAG TAACATATCC TGCTTTTCC 29

(2) INFORMATION FOR SEQ ID NO: 93:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 26 base pairs

(B) TYPE: Nucleic Acid

(C) STRANDEDNESS: Single

(D) TOPOLOGY: Linear

(iv) ANTI-SENSE: Yes

(ix) FEATURE:

(D) OTHER INFORMATION: Antisense to HIV

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: WO 96/02557 (SEQ ID NO:8)

(I) FILING DATE: 14-JUL-1995

(J) PUBLICATION DATE: 01-FEB-1996

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 93:

GGTTGCTTCC TTCCTCTCTG GTACCC 26

(2) INFORMATION FOR SEQ ID NO: 94:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 41 base pairs

(B) TYPE: Nucleic Acid

(C) STRANDEDNESS: Single

(D) TOPOLOGY: Linear

(iv) ANTI-SENSE: Yes

(ix) FEATURE:

(D) OTHER INFORMATION: Antisense to HIV

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: WO 96/02557 (SEQ ID NO:10)

(I) FILING DATE: 14-JUL-1995

(J) PUBLICATION DATE: 01-FEB-1996

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 94:

CTAGCAGTGG CGCCCGAACA GGTTGCCTG TTCGGGCGCC A 41

(2) INFORMATION FOR SEQ ID NO: 95:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 30 base pairs

(B) TYPE: Nucleic Acid

(C) STRANDEDNESS: Single

(D) TOPOLOGY: Linear

(iv) ANTI-SENSE: Yes

(ix) FEATURE:

(D) OTHER INFORMATION: Antisense to HIV

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: WO 96/02557 (SEQ ID NO:22)

(I) FILING DATE: 14-JUL-1995

(J) PUBLICATION DATE: 01-FEB-1996

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 95:



CATCACCTGC CATCTGTTTT CCATAATCCC 30

- (2) INFORMATION FOR SEQ ID NO: 96:
- (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 31 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to HIV
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 96/02557 (SEQ ID NO:23)
    - (I) FILING DATE: 14-JUL-1995
    - (J) PUBLICATION DATE: 01-FEB-1996
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 96:

CCTGTCTACT TGCCACACAA TCATCACCTG C 31

- (2) INFORMATION FOR SEQ ID NO: 97:
- (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 30 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to HIV
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 96/02557 (SEQ ID NO:25)
    - (I) FILING DATE: 14-JUL-1995
    - (J) PUBLICATION DATE: 01-FEB-1996
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 97:

ACTATTGCTA TTATTATTGC TACTACTAAT 30

- (2) INFORMATION FOR SEQ ID NO: 98:
- (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 26 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to HIV
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 95/03406 (SEQ ID NO:1)
    - (I) FILING DATE: 19-JUL-1994
    - (J) PUBLICATION DATE: 02-FEB-1995
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 98:

CTTCGGGCCT GTCGGGTCCC CTCGGG 26

- (2) INFORMATION FOR SEQ ID NO: 99:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 25 base pairs
  - (B) TYPE: Nucleic Acid
  - (C) STRANDEDNESS: Single
  - (D) TOPOLOGY: Linear
- (iv) ANTI-SENSE: Yes
- (ix) FEATURE:
  - (D) OTHER INFORMATION: Antisense to HIV
- (x) PUBLICATION INFORMATION:
  - (H) DOCUMENT NUMBER: WO 95/03406 (SEQ ID NO:2)
  - (I) FILING DATE: 19-JUL-1994
  - (J) PUBLICATION DATE: 02-FEB-1995
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 99:

CUUCGGGCCU GUCGGGUCCC UCGGG 25

- (2) INFORMATION FOR SEQ ID NO: 100:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 14 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to HIV
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 95/03406 (SEQ ID NO:3)
    - (I) FILING DATE: 19-JUL-1994
    - (J) PUBLICATION DATE: 02-FEB-1995
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 100:

GCCTGTCGGG TCCC 14

- (2) INFORMATION FOR SEQ ID NO: 101:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 14 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to HIV
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 95/03406 (SEQ ID NO:4)
    - (I) FILING DATE: 19-JUL-1994
    - (J) PUBLICATION DATE: 02-FEB-1995
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 101:

GCCUGUCGGG UCCC 14

- (2) INFORMATION FOR SEQ ID NO: 102:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 26 base pairs
    - (B) TYPE: Nucleic Acid

- (C) STRANDEDNESS: Single
- (D) TOPOLOGY: Linear
- (iv) ANTI-SENSE: Yes
- (ix) FEATURE:
  - (D) OTHER INFORMATION: Antisense to HIV
- (x) PUBLICATION INFORMATION:
  - (H) DOCUMENT NUMBER: WO 95/03406 (SEQ ID NO:5)
  - (I) FILING DATE: 19-JUL-1994
  - (J) PUBLICATION DATE: 02-FEB-1995
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 102:

CTTCGGGCCT GTCGGGTCCC CTCGGG 26

- (2) INFORMATION FOR SEQ ID NO: 103:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 26 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to HIV
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 95/03406 (SEQ ID NO:6)
    - (I) FILING DATE: 19-JUL-1994
    - (J) PUBLICATION DATE: 02-FEB-1995
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 103:

GCTGGTGATC CTTTCCATCC CTGTGG 26

- (2) INFORMATION FOR SEQ ID NO: 104:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 8 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to HIV; a.k.a. "ISIS 5320"
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: US 5523389
    - (I) FILING DATE: 28-SEP-1994
    - (J) PUBLICATION DATE: 04-JUN-1995
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 104:

TTGGGGTT 8

- (2) INFORMATION FOR SEQ ID NO: 105:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 20 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear

- (iv) ANTI-SENSE: Yes
- (ix) FEATURE:
  - (D) OTHER INFORMATION: Antisense to Hepatitis C Virus;  
a.k.a. "ISIS 6547"
- (x) PUBLICATION INFORMATION:
  - (A) AUTHORS: Hanecak, R., et al.
  - (B) TITLE: Intramolecular G-quartet Motifs Confer  
Nuclease Resistance to a Potent Anti-HIV  
Oligonucleotide
  - (C) JOURNAL: Journal of Virology
  - (D) VOLUME: 70
  - (E) ISSUE: 8
  - (F) PAGES: 5203-5212
  - (G) DATE: 01-AUG-1996
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 105:

GTGCTCATGG TGCACGGTCT 20

- (2) INFORMATION FOR SEQ ID NO: 106:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 20 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to influenza virus
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 91/16902 (SEQ ID NO:1)
    - (I) FILING DATE: 29-APR-1991
    - (J) PUBLICATION DATE: 14-NOV-1991
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 106:

CATTCAAATG GTTTGCCCTGC 20

- (2) INFORMATION FOR SEQ ID NO: 107:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 20 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to influenza virus
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 91/16902 (SEQ ID NO:2)
    - (I) FILING DATE: 29-APR-1991
    - (J) PUBLICATION DATE: 14-NOV-1991
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 107:

GCAGGCAAAC CATTTGAATG 20

- (2) INFORMATION FOR SEQ ID NO: 108:
  - (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: Nucleic Acid
- (C) STRANDEDNESS: Single
- (D) TOPOLOGY: Linear
- (iv) ANTI-SENSE: Yes
- (ix) FEATURE:
  - (D) OTHER INFORMATION: Antisense to influenza virus
- (x) PUBLICATION INFORMATION:
  - (H) DOCUMENT NUMBER: WO 91/16902 (SEQ ID NO:3)
  - (I) FILING DATE: 29-APR-1991
  - (J) PUBLICATION DATE: 14-NOV-1991
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 108:

CCATAATCCC CTGCTTCTGC 20

- (2) INFORMATION FOR SEQ ID NO: 109:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 20 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to influenza virus
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 91/16902 (SEQ ID NO:4)
    - (I) FILING DATE: 29-APR-1991
    - (J) PUBLICATION DATE: 14-NOV-1991
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 109:

GCAGAAGCAG GGGATTATGG 20

- (2) INFORMATION FOR SEQ ID NO: 110:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 20 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to influenza virus
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 91/16902 (SEQ ID NO:5)
    - (I) FILING DATE: 29-APR-1991
    - (J) PUBLICATION DATE: 14-NOV-1991
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 110:

GCAGAAGCAG AGGATTATGG 20

- (2) INFORMATION FOR SEQ ID NO: 111:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 20 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single

- (D) TOPOLOGY: Linear
- (iv) ANTI-SENSE: Yes
- (ix) FEATURE:
  - (D) OTHER INFORMATION: Antisense to influenza virus
- (x) PUBLICATION INFORMATION:
  - (H) DOCUMENT NUMBER: WO 91/16902 (SEQ ID NO:6)
  - (I) FILING DATE: 29-APR-1991
  - (J) PUBLICATION DATE: 14-NOV-1991
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 111:

GCATAAGCAG AGGATCATGG 20

- (2) INFORMATION FOR SEQ ID NO: 112:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 20 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to influenza virus
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 91/16902 (SEQ ID NO:7)
    - (I) FILING DATE: 29-APR-1991
    - (J) PUBLICATION DATE: 14-NOV-1991
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 112:

GGCAAGCTTT ATTGAGGCTT 20

- (2) INFORMATION FOR SEQ ID NO: 113:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 20 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to influenza virus
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 91/16902 (SEQ ID NO:8)
    - (I) FILING DATE: 29-APR-1991
    - (J) PUBLICATION DATE: 14-NOV-1991
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 113:

ATCTTCATCA TCTGAGAGAT 20

- (2) INFORMATION FOR SEQ ID NO: 114:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 20 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:

- (D) OTHER INFORMATION: Antisense to influenza virus
- (x) PUBLICATION INFORMATION:
  - (H) DOCUMENT NUMBER: WO 91/16902 (SEQ ID NO:9)
  - (I) FILING DATE: 29-APR-1991
  - (J) PUBLICATION DATE: 14-NOV-1991
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 114:

CGTAAGCAAC AGTAGTCCTA 20

- (2) INFORMATION FOR SEQ ID NO: 115:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 25 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to Epstein-Barr Virus
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 95/22554 (SEQ ID NO:1)
    - (I) FILING DATE: 17-FEB-1995
    - (J) PUBLICATION DATE: 24-AUG-1995
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 115:

TTTGGGTCCA TCATCTTCAG CAAAG 25

- (2) INFORMATION FOR SEQ ID NO: 116:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 20 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to Epstein-Barr Virus
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 95/22554 (SEQ ID NO:2)
    - (I) FILING DATE: 17-FEB-1995
    - (J) PUBLICATION DATE: 24-AUG-1995
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 116:

CATCATCTTC AGCAAAGATA 20

- (2) INFORMATION FOR SEQ ID NO: 117:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 20 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to Epstein-Barr Virus
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 95/22554 (SEQ ID NO:3)

(I) FILING DATE: 17-FEB-1995

(J) PUBLICATION DATE: 24-AUG-1995

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 117:

TCAGAAGTCG AGTTTGGGTC 20

(2) INFORMATION FOR SEQ ID NO: 118:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 base pairs

(B) TYPE: Nucleic Acid

(C) STRANDEDNESS: Single

(D) TOPOLOGY: Linear

(iv) ANTI-SENSE: Yes

(ix) FEATURE:

(D) OTHER INFORMATION: Antisense to Respiratory Syncytial Virus

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: WO 95/22553 (SEQ ID NO:1)

(I) FILING DATE: 17-FEB-1995

(J) PUBLICATION DATE: 24-AUG-1995

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 118:

ACGCGAAAAA ATGCGTACAA 20

(2) INFORMATION FOR SEQ ID NO: 119:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 base pairs

(B) TYPE: Nucleic Acid

(C) STRANDEDNESS: Single

(D) TOPOLOGY: Linear

(iv) ANTI-SENSE: Yes

(ix) FEATURE:

(D) OTHER INFORMATION: Antisense to Respiratory Syncytial Virus

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: WO 95/22553 (SEQ ID NO:2)

(I) FILING DATE: 17-FEB-1995

(J) PUBLICATION DATE: 24-AUG-1995

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 119:

TAAACCAAAA AAATGGGGCA 20

(2) INFORMATION FOR SEQ ID NO: 120:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 base pairs

(B) TYPE: Nucleic Acid

(C) STRANDEDNESS: Single

(D) TOPOLOGY: Linear

(iv) ANTI-SENSE: Yes

(ix) FEATURE:

(D) OTHER INFORMATION: Antisense to Respiratory Syncytial Virus

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: WO 95/22553 (SEQ ID NO:3)



(I) FILING DATE: 17-FEB-1995

(J) PUBLICATION DATE: 24-AUG-1995

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 120:

AAATGGGGCA AATAAGAATT 20

(2) INFORMATION FOR SEQ ID NO: 121:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 base pairs

(B) TYPE: Nucleic Acid

(C) STRANDEDNESS: Single

(D) TOPOLOGY: Linear

(iv) ANTI-SENSE: Yes

(ix) FEATURE:

(D) OTHER INFORMATION: Antisense to Respiratory Syncytial Virus

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: WO 95/22553 (SEQ ID NO:4)

(I) FILING DATE: 17-FEB-1995

(J) PUBLICATION DATE: 24-AUG-1995

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 121:

AAAAATGGGG CAAATAAATC 20

(2) INFORMATION FOR SEQ ID NO: 122:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 base pairs

(B) TYPE: Nucleic Acid

(C) STRANDEDNESS: Single

(D) TOPOLOGY: Linear

(iv) ANTI-SENSE: Yes

(ix) FEATURE:

(D) OTHER INFORMATION: Antisense to cytomegalovirus intron-exon boundary of genes UL36 and UL37; a.k.a. "UL36ANTI" and "GEM 132"

(x) PUBLICATION INFORMATION:

(A) AUTHORS: Pari, G.S., et al.

(B) TITLE: Potent Antiviral Activity of an Antisense Oligonucleotide Complementary to the Intron-Exon Boundary of Human Cytomegalovirus Genes UL36 and UL37

(C) JOURNAL: Antimicrobial Agents and Chemotherapy

(D) VOLUME: 39

(E) ISSUE: 5

(F) PAGES: 1157-1161

(G) DATE: MAY-1995

(x) PUBLICATION INFORMATION:

(H) DOCUMENT NUMBER: WO 95/32213 (SEQ ID NO:1)

(I) FILING DATE: 19-MAY-1995

(J) PUBLICATION DATE: 30-NOV-1995

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 122:

TGGGGCTTAC CTTGCGAACA 20

(2) INFORMATION FOR SEQ ID NO: 123:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: Nucleic Acid
- (C) STRANDEDNESS: Single
- (D) TOPOLOGY: Linear
- (iv) ANTI-SENSE: Yes
- (ix) FEATURE:
  - (D) OTHER INFORMATION: Antisense to cytomegalovirus
- (x) PUBLICATION INFORMATION:
  - (H) DOCUMENT NUMBER: WO 95/32213 (SEQ ID NO:2)
  - (I) FILING DATE: 19-MAY-1995
  - (J) PUBLICATION DATE: 30-NOV-1995
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 123:

GACGTGGGGC TTACCTTGCG 20

- (2) INFORMATION FOR SEQ ID NO: 124:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 20 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to cytomegalovirus
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 95/32213 (SEQ ID NO:3)
    - (I) FILING DATE: 19-MAY-1995
    - (J) PUBLICATION DATE: 30-NOV-1995
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 124:

TCTTCAACGA CGTGGGGCTT 20

- (2) INFORMATION FOR SEQ ID NO: 125:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 21 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to cytomegalovirus
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 95/32213 (SEQ ID NO:4)
    - (I) FILING DATE: 19-MAY-1995
    - (J) PUBLICATION DATE: 30-NOV-1995
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 125:

GACGCGTGGC ATGCTTGGT T 21

- (2) INFORMATION FOR SEQ ID NO: 126:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 21 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single

- (D) TOPOLOGY: Linear
- (iv) ANTI-SENSE: Yes
- (ix) FEATURE:
  - (D) OTHER INFORMATION: Antisense to cytomegalovirus
- (x) PUBLICATION INFORMATION:
  - (H) DOCUMENT NUMBER: WO 95/32213 (SEQ ID NO:5)
  - (I) FILING DATE: 19-MAY-1995
  - (J) PUBLICATION DATE: 30-NOV-1995
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 126:

AGGTTGGGGT CGACGCGTGG C 21

- (2) INFORMATION FOR SEQ ID NO: 127:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 21 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to cytomegalovirus
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 95/32213 (SEQ ID NO:6)
    - (I) FILING DATE: 19-MAY-1995
    - (J) PUBLICATION DATE: 30-NOV-1995
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 127:

GGCTGAGCGG TCATCCTCGG A 21

- (2) INFORMATION FOR SEQ ID NO: 128:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 20 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to cytomegalovirus
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 95/32213 (SEQ ID NO:7)
    - (I) FILING DATE: 19-MAY-1995
    - (J) PUBLICATION DATE: 30-NOV-1995
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 128:

CGGGACTCAC CGTCGTTCTG 20

- (2) INFORMATION FOR SEQ ID NO: 129:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 20
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:

- (D) OTHER INFORMATION: Antisense to cytomegalovirus
- (x) PUBLICATION INFORMATION:
  - (H) DOCUMENT NUMBER: WO 95/32213 (SEQ ID NO:8)
  - (I) FILING DATE: 19-MAY-1995
  - (J) PUBLICATION DATE: 30-NOV-1995
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 129:

GGAGGAGAGC CTACAGACGG 20

- (2) INFORMATION FOR SEQ ID NO: 130:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 20 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to cytomegalovirus
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: WO 95/32213 (SEQ ID NO:9)
    - (I) FILING DATE: 19-MAY-1995
    - (J) PUBLICATION DATE: 30-NOV-1995
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 130:

AGTAACGCAC CGTCGGTGCC 20

- (2) INFORMATION FOR SEQ ID NO: 131:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 21 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to cytomegalovirus;  
a.k.a. "ISIS 2922"
  - (x) PUBLICATION INFORMATION:
    - (H) DOCUMENT NUMBER: US 5442049 (SEQ ID NO:22)
    - (I) FILING DATE: 25-JAN-1993
    - (J) PUBLICATION DATE: 15-AUG-1995
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 131:

GCGTTTGCTC TTCTTCTTGC G 21

- (2) INFORMATION FOR SEQ ID NO: 132:
  - (i) SEQUENCE CHARACTERISTICS:
    - (A) LENGTH: 19 base pairs
    - (B) TYPE: Nucleic Acid
    - (C) STRANDEDNESS: Single
    - (D) TOPOLOGY: Linear
  - (iv) ANTI-SENSE: Yes
  - (ix) FEATURE:
    - (D) OTHER INFORMATION: Antisense to VEGF/VPF; a.k.a. "H3"
  - (x) PUBLICATION INFORMATION:

(A) AUTHORS: Smyth, A.P., et al.  
(B) TITLE: Antisense Oligonucleotides Inhibit Vascular  
Endothelial Growth Factor/vascular Permeability Factor Expression  
in Normal Human Epidermal Keratinocytes Boundary of Human  
Cytomegalovirus Genes UL36 and UL37  
(C) JOURNAL: The Journal of Investigative Dermatology  
(D) VOLUME: 108  
(E) ISSUE: 4  
(F) PAGES: 523-526  
(G) DATE: N/A-APR-1997

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 132:

CACCCAAGAC AGCAGAAAG

19